Automatic counter of...

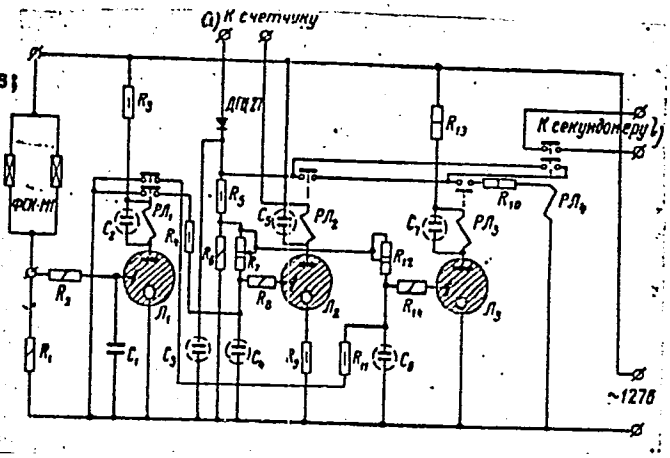
oscillating light ray opens the two photoresistors is excluded. The cell on thyratron L_3 switches on the electric second meter after the counting. Resistor R_{12} is calculated such that the firing potential of thyratron L_3 is reached only if the ignition of the photoresistors is completely interrupted. The electric second meter consists of the synchronous motor of the type СД-2 (SD-2) or СД-60 (SD-60) and any mechanical decimal counter. As the brightness of the light ray must be sufficiently strong to warrant a smooth operation of the automatic counter, a reflector is used for measuring the internal friction, while an СВДШ-250 (SVDSh-250) mercury lamp serves as a light source. With R_7 and R_{12} = 68 kilohms, and C_4 and C_6 = 20 μF, the vibration number can be counted in the desired range of amplitudes at 0.3 - 2.0 cps. There are 1 figure and 1 Soviet-bloc reference.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnic Institute)

Automatic counter of...

S/032/61/027/002/021/026
B124/B201

Legend to the figure: Basic scheme of the automatic counter of the vibration number. R_1 = 7.8 megohms; R_2 = 1 megohm; R_3 = 680 ohms; R_4 = 1 kilohm; R_5 = 22 kilohms; R_6 = 100 kilohms; R_7 = 68 kilohms; R_8 = 51 kilohms; R_9 =680 ohms; R_{10} = 11 kilohms; R_{11}=1 kilohm; R_{12} =68 kilohms; R_{13}=1.5 kilohms; R_{14} = 62 kilohms; C_1 = 820 pF; C_2=30μF; C_3=C_4=C_5=C_6=C_7 = 20μF.
a) To counter; b) to second meter.



Card 4/4

33416
S/032/62/028/002/018/037
B104/B108

24.5500

AUTHOR: Cherepin, V. T.

TITLE: Temperature measurement at high heating and cooling rates

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 2, 1962, 200-203

TEXT: The author describes a d-c ampli.. - with two germanium triodes (Fig.) which permits thermocouple measureme.. to be made at high heating rates with a loop galvanometer. The amplifier ..erates with an 0.08 chromel-copel thermocouple. The current amplifica.. factor is $3 \cdot 10^4$, the maximum output current is 200 ma. Temperatures can be measured at heating rates of 3000 - 5000°C/sec. If the amplifier is loaded ..v up to 50%, galvanometers with a 1-2 mm/ma sensitivity can be used. T.. amplifier can also be used for programmed temperature controls. If specime.. are directly heated by electric current a characteristic noise occu.. in the temperature recording which interferes with the temperature curve. This noise is caused by the superposition of a voltage drop across the s.. cimen between the thermojunctions over the thermo-emf. The noise is not

Card 1/2

controllable and can reach an amplitude comparable to that of the useful signal. Possible ways of reducing this noise: use of electric filters, increased attenuation of the galvanometer, increased frequency of the heating current. The first method is applicable only with heating rates up to 2000°C/sec and up to 50 cps. In this case condenser filters are used (200 - 1000 μF). The attenuation of the galvanometer cannot be increased at higher heating rates because temperature indications will be retarded. The best results were obtained at frequencies of 1000 - 1500 cps. In this case up to 5000°C/sec can easily be measured. In the range 5000-30 000°C/sec measurements are possible, however, careful calibrations are necessary. d-c cannot be used to heat the specimens because the error which displaces the measured value in one direction (+ or -) has constant sign. V. G. Nechiporenko made the measurements. There are 3 figures and 6 references: 4 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: R. Bright, A. Kruper. Electronics, 28, no. 4, 135 (1955); W. G. Feuerstein, W. K. Smith. Transact. Amer. Soc. for Metals, v. XLVI, 1270 (1954).

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnic Institute)

S/126/62/014/001/005/018
E111/E135

AUTHORS: Belous, M.V., and Cherepin, V.T.

TITLE: Changes in the carbide phase under the influence of cold plastic deformation.

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.1, 1962, 48-54

TEXT: The laws are studied which govern the changes in the carbide phase and graphitization during plastic deformation and subsequent heating of the steels У12А (U12A), У10А (U10A), У8А (U8A), У7 (U7) and 60, with carbon contents of 1.19 to 0.60%. Magnetometric and dilatometric methods were used for the main investigations; the changes in the average composition of the carbide-phase region were also calculated. The results indicate that the action of cold plastic deformation on the austenite is as follows. The cementite particles are crushed and some of them decompose and break down, resulting in the formation of free carbon and iron which leads to increasing magnetization of the steel. The carbon atoms surround the remaining cementite

Card 1/2

particles; a possibly important factor here is the attraction of impurity atoms to structural imperfections and the cementite/alpha-phase boundary. Some of the carbon atoms surrounding the cementite plates penetrate inside the crystal lattice of the carbide, leading to a change in its Curie point. When the deformed steel is heated, the carbon atoms acquire a high mobility and can react with each other and with iron atoms. The first leads to formation of graphite regions, this being facilitated by the presence in the alloy of micropores formed during plastic deformation. The second leads to reformation of cementite and a decrease in the magnetization of the steel. There are 5 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiev Polytechnical Institute)

SUBMITTED: November 26, 1961

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308410015-9"

18.7500

S/126/62/014/002/017/018
E071/E435

AUTHORS: Belous, M.V., Cherepin, V.T.

TITLE: Changes in the carbide phase of steel under the influence of cold plastic deformation

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.2, 1962, 312-314

TEXT: This is a continuation of previous work (FMM - in print) in which it was shown that on plastic deformation of highly annealed steel a partial decomposition of the carbide phase with the formation of free carbon and iron takes place. On subsequent heating the graphitization of the carbide phase will set in but a part of the free carbon will again combine with iron to form cementite; the results of magnetic and dilatometric analyses were in good agreement, at least up to a medium degree of deformation. In the present investigation, the behaviour of a coarse platelike pearlite obtained by annealing specimens of У12А (U12A) steel (1.19% C, 0.02% Cr, 0.24% Mn, 0.25% Si, 0.10% Ni, 0.020% S, 0.011% P) in charcoal at 1000°C was studied. Cold plastic deformation was produced by drawing through dies.
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Changes in the carbide phase ...

The experimental method was the same as previously. Analysis of thermomagnetic curves and calculations show that with an increasing degree of plastic deformation the cementite decomposes into iron and chemically free carbon. On subsequent reheating a considerable part of the cementite will graphitize. From the decrease in the cementite effect on thermomagnetic cooling curves, the degree of graphitization was calculated. The presence of an irreversible decrease in the degree of magnetization on heating in the range 300 to 600°C indicates partial reconstitution of the cementite. Reannealing at 950°C in a neutral medium brought about the reconstitution of the initial cementite effect and of the initial microstructure. The dilatometric curves gave an unexpected result - a decrease in specific volume after the cycle: heating to 600°C - cooling to room temperature. This indicates that plastic deformation of a coarse plate structure is accompanied by the formation of a large number of micropores and microcracks. Heating of little deformed specimens brings about healing of the microcracks and a decrease in specific volume. At high deformations the graphitization is speeded up and the

Changes in the carbide phase ...

microcracks can become places of separation of carbon in the form of graphite. There are 3 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiyev Polytechnical Institute)

SUBMITTED: February 14, 1962

Card 3/3

BELOUS, M.V.; CHEREFIN, V.T.

Changes in the carbide phase of steel under the effect of cold plastic deformation. Fiz. met. i metalloved. 14 no.2:312-314 Ag '62. (MIRA 15:12)

1. Kiyevskiy politekhnicheskiy institut.
(Steel—Metallography)

GRIDNEV, V.N.; CHEREPIN, V.T.

Peculiarities of phase transformations in deformed iron alloys during rapid electric heating. Izv. vys. ucheb. zav.; chern. met. 6 no.9:169-173 '63. (MIRA 16:11)

1. Kiyevskiy politekhnicheskiy institut.

S/126/63/015/002/009/033
E193/E383

AUTHORS: Belous, M.V. and Cherepin, V.T.

TITLE: Changes in the carbide phase of steel under the influence of cold plastic deformation. IV. The carbide transformation in stage III of tempering in steel subjected to low-temperature tempering and cold deformation

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 2, 1963, 215 - 221

TEXT: Steel Y8A (U8A) test pieces, measuring 3 x 3 x 20 mm and accurately machined, were water-quenched from 1 000 °C, cooled to -78 °C and tempered (1 h at 250 °C) at a temperature just below the carbide-transformation temperature. The test pieces, which after this treatment consisted of tempered martensite (practically ferrite) and the low-temperature ε-carbide, were then given cold plastic deformation (in compression) ranging from 5-40% reduction and heated to 0-600 °C temperature interval, the changes in the crystal lattice of the carbide phase and in its concentration being followed by dilatometric and magnetic measurements, respectively.
Card 1/4

Changes in the carbide phase ....

S/126/63/015/002/009/033
E193/E383

The effect of cold plastic deformation on the temperature-dependence of the volume and magnetic properties of the test pieces studied was interpreted in the following manner. Cold deformation of steel U8A, hardened and tempered at 250 °C, brought about fragmentation of the ε-carbide particles, some of which became decomposed. The latter process, accompanied by the formation of free ferrite, increased the intensity of magnetization and, as a result of the reduced quantity of the ε-phase, decreased the magnitude of the volumetric effect in stage III of the transformation. The carbon produced by decomposition of the ε-phase was in a specific state insofar as it was neither combined with iron nor agglomerated in the form of graphite particles. When cold-worked test pieces were heated, the still-existing ε-phase particles were transformed into cementite. Some of the free carbon atoms interacted with iron to form cementite, this process being accompanied by a change in the intensity of magnetization of the steel (the so-called "magnetic X-effect"). The remaining free carbon atoms diffused, agglomerated and formed microvolumes of graphite. This process did not affect the magnetic properties of steel but

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Changes in the carbide phase ....

decreased the quantity of cementite in the steel. The higher the concentration of "free" carbon atoms which form cementite, the more pronounced were the magnetic and cementite effects in stage III of the transformation and the lower the degree of graphitization. The results of analytical treatment of the dilatometric and magnetic measurements are reproduced in Fig. 4, showing the effect of plastic deformation (Ψ, %) on the state of the carbide phase in steel U8A, tempered at a low temperature, curves 1-6 representing: 1 - change in the dilatometric effect in stage III of tempering; 2 - increase in the intensity of magnetization after cold deformation; 3 - change in the magnetic effect in stage III of tempering (dots) and at the A_0 point (circles); 4 - degree of graphitization of steel; 5-6; degree of decomposition of the ε-phase during cold deformation, calculated, respectively, from the magnetic and dilatometric data. It is pointed out in the conclusion that the results of the present work demonstrate again the fallacy of the view (A.P. Gylyayev and N.I. Burova - Metallovedeniye i obrabotka metallov, 1955, no. 1) that the volumetric effect in stage III of the tempering of steel is associated with recrystallization of the α-phase. Since

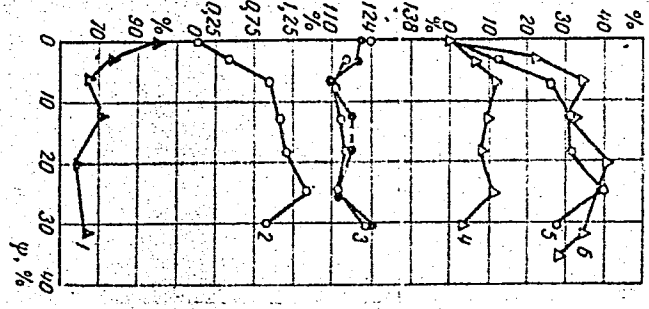
Card 3/4

Changes in the carbide phase ....

preliminary plastic deformation brings about a decrease in the volumetric effect observed on subsequent heating, the above explanation is not acceptable. There are 4 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: May 22, 1962



Card 4/4

Fig. 4:

L 25273-65 EWT(m)/EPF(c)/T Pr-4 WE
ACCESSION NR: AP5001489 S/0065/64/000/012/0047/0051

28
27
B

AUTHOR: Shekhter, Yu. N.; Yevstratova, N. I.; Cherepenina, V. N.

TITLE: Corrosion inhibiting additives to sulfur containing fuels

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1964, 47-51

TOPIC TAGS: metal corrosion, corrosion inhibitor, fuel, fuel additive, gasoline additive, sulfur containing fuel

ABSTRACT: In order to stabilize fuels antioxidants are added to them. These antioxidants prevent the formation of oxidation products in gasolines. These substances are not corrosion inhibitors, i. e. they do not protect the metal from destruction in the presence of water. The corrosion of metal is developed not only because of the action of dispersed water, but also because of increased aggresiveness of mercaptans, disulfides and sulfides. Consequently, along with antioxidants it is necessary to add corrosion inhibitors to fuel. It was established that combinations of the majority of oil soluble corrosion inhibitors are more

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L 25273-65
ACCESSION NR: AP5001489

effective than any single one of them. Thus, a mixture of three substances, containing sulfo groups, nitro groups and amino groups surpass, in terms of protective efficiency, sulfonates, nitrooils or amine containing corrosion inhibitors. As a result of the conducted work on the selection of composition two combination additives were selected: KP-1 and KP-2. KP additives are produced by mixing acid sulfo and nitro products. The production technology of mixed additives is simpler and the quality of products is better. Data were obtained which show that during combustion of sulfur containing diesel fuels the maximum corrosion of steel occurs both at low(100 C) and high (500 C or higher) temperatures. Under these conditions during combustion of fuel without additive the whole surface of the tested steel plate is subjected to corrosion, the plate darkens and corrosion spots occur on it. During combustion of fuel with KP additives the surface of the plates remains as clean and shiny as before the test. Orig. art. has: 2 tables

ASSOCIATION: Moskovskiy zavod "Neftegaz" (Moscow Plant "Neftegaz")

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, GC
NR REF SOV: 010 OTHER: 005
Card 2/2

VIROGRAD, L.Kh.; SHEVYU, S.M.; CHERNYAVSKAYA, A.I.; SHALIMOVA, G.V.

Fluorine-containing 2-phenylamino-1,4-naphthoquinones. Zhur. prikl. khim. 38 no.1:208-211 Ja '65. (MIRA 18:3)

1. Rubezhanskiy filial Nauchno-issledovatel'skogo instituta organicheskikh poluproduktov i krasiteley.

ZHABIN, A.G.; CHEREPIVSKAYA, G.Ye.

Rheomorphic veins of liquefied sandstone, fenitized sandstone, and tuffaceous sandstone dikes from the Maymecha-Kotuy magmatic province in Arctic Siberia. Dokl. AN SSSR 156 no. 4:851-854 Je '64. (MIRA 17:6)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Predstavleno akademikom D.S.Korzhinskim.

ZHABIN, A.G.; CHEREPIVSKAYA, G.Ye.

Carbonate dikes in connection with ultrabasic-alkali effusive rocks. Dokl. AN SSSR 160 no.1:200-203 Ja '65. (MIRA 18:2)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Submitted July 7, 1964.

L 21218-65 EEO-2/EWT(d)/EEC-4/EPR Pn-4/Po-4/Pp-4/Pq-4/Pg-4/Ps-4/Pk-4/
ACCESSION NR: AP5000074 Pl-4 AFTC(a) BC S/0209/64/000/003/0036/0039

AUTHOR: Shishkov, A. (Colonel, Military navigator first class), Cherepivskiy, K. (Engineer, Lieutenant colonel)

TITLE: The navigation system in an airplane

SOURCE: Aviatsiya i kosmonavtika, no. 3, 1964, 36-39

TOPIC TAGS: course indicator, gyroscope bearing, gyroscope error compensation, navigation system error, navigation aid

ABSTRACT: The peculiarities and difficulties which should be taken into account when using the navigation system in an airplane are discussed, and various recommendations are analyzed which would facilitate the navigator's function in flight with respect to coordinating the navigation instruments. The error in magnetic course readings when coordinating the course system in the KM magnetic correction regime on the flight line is discussed. It is stated that, prior to takeoff, navigators must check the readings of the system's indicators in all its operating regimes on the main and standby gyro-assemblies. The author points out that the navigator must known the mean magnitude of gyro-assembly azimuth wander. The article gives a detailed explanation of how to determine this magnitude. It is stated that the navigation system cannot always be used

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L 21218-65
ACCESSION NR: AP5000074

in the MK regime when powerful users of electrical energy are switched on. The article also states that it is best to switch to a GPK regime when following a precise routine. The author concludes that all these recommendations need to be discussed and refined so that simpler and more effective methods may be developed for using the navigation system in airplanes and other aircraft. Orig. art. has 1 figure.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AC, NG

NO REF SOV: 000 OTHER: 000

Card 2/2

CHEREPNINA, S.K.; DZYUBO, P.S.

Tabulata and rugosa of the Salair facies type from Lower Devonian sediments in the Altai. Mat.po geol.Zap.Sib. no.63:160-170 '62. (MIRA 16:10)

CHEREPINSKAYA, L.D.

Construction of dwellings for communication workers. Vest. sviazi 19 no.11:28 N '59. (MIRA 13:8)

1. Starshiy inzhener po kapital'nomu stroitel'stvu Sverdlovskogo oblastnogo upravleniya svyazi.
(Telecommunication--Employees)
(Labor and laboring classes--Dwellings)

GERASIMENKO, Yu.Ye.; SHEYN, S.M.; BAKULINA, G.G.; CHEREPIVSKAYA, A.P.; SEMENYUK, G.V.; YAGUPOL'SKIY, L.M.

Thioindigoid dyes. Part 9: Thioindigoid dyes containing fluorine. Zhur.ob.khim. 32 no.6:1870-1874 Je '62. (MIRA 15:6)
(Thioindigo)

SOV/133-58-8-4/30

AUTHOR: Cherepivskiy, A.A. and Skrebtsov, A.M., Engineers

TITLE: A Study of the Movement of Burden Materials in a Blast Furnace Using Radioactive Isotopes (Izucheniye dvizheniya materialov v domennoy pechi pri pomoshchi radioaktivnykh izotopov)

PERIODICAL: Stal', 1958, Nr 8, pp 687 - 690 (USSR)

ABSTRACT: This paper is a contribution to the previously published paper of I.G. Polovchenko under the same title (Ref 1). The present author points out that the use of radioactive isotopes enclosed in graphite or steel shells to represent ore and coke, respectively, may lead to errors as a steel shell will melt earlier than iron ore and graphite shell would oxidise much slower than coke. The conclusion of the previous author on a uniform distribution of radio-isotope in the metal in the hearth is also contested. It is shown on the basis of a work carried out in co-operation with TsNIIChM, in which radioactive isotopes were introduced into the hearth through a tuyere (near to the tap hole) during casting and at various times before casting (Figure 1) that mixing of metal in the hearth is not as efficient as was assumed by the original author. From a change in the radioactivity in two subsequent casts,

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the average amount of metal left after the cast was calculated; this, on average, is below 100 t. The comparison of the distribution of radioactive isotopes in two subsequent casts after its introduction on the top of the furnace (Figure 2) indicates that the distribution of the isotope in the metal is of a diffusion nature. There are 2 figures and 9 Soviet references.

ASSOCIATION: Zavod "Azovstal'" ("Azovstal'" Works)

Card 2/2 1. Blast furnaces---Performance 2. Radioisotopes---Applications

CHEREPIVSKIY, A.A.

S/137/62/000/001/055/237
A060/A101

AUTHORS: Bul'skiy, M.T., Val'ter, O.I., Skrebtsov, A.M., Kostyuk, V.A., Sviridenko, F.P., Cherepivskiy, A.A.

TITLE: Use of radioactive isotopes for the investigation of the production technology at the Azovstal' plant

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 6, abstract 1V41 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 130 - 132)

TEXT: The authors consider the problem of applying radioactive isotopes in the blast-furnace, open-hearth furnace, rolling practice. The most important researches carried out at the plant were: 1) the study of the operation of open-hearth furnaces when the liquid finishing slag from the preceding heat was left in the furnace; 2) the study of the expediency of using incompletely burned lime instead of limestone in the charge of open-hearth furnaces; 3) the study of the quantity of slag during the pure ebullition period of the vat upon the

Card 1/2

quality of the steel smelted; 4) the determination of the quantity of exogenous nonmetallic impurities in rail steel. The utilization of radioactive isotopes for γ-ray defectoscopy is described.

N. Yudina

[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308410015-9"

GULIGA, D.V., inzh.; GORBANEV, Ya.S., inzh.; CHEREPIVSKIY, A.A., inzh.

Studying the flow of charge materials in blast furnaces during the smelting of Kamysh-Burun sinters. Stal' 23 no.8:686-689 Ag '63. (MIRA 16:9)

1. Metallurgicheskiy zavod "Azovstal'."
(Blast furnaces)

LEVCHENKO, Ya.; CHEREPIVSKIY, V.

Important contribution to progress in technology. Sov.shakht. 10 no.7:3-4 Jl '61. (MIRA 14:8)

1. Zamestitel' nachal'nika kombinata Tulaugol' (for Levchenko).
2. Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdela Tul'skogo sovnarkhoza (for Cherepivskiy).
(Coal mines and mining--Technological innovations)

CHERKPKOV, B.M., inzh.; TUTOV, N.M., inzh.

Effective foundations for pedestrian bridges. Transp.stroi. 10 no.2:27-28 F '60. (MIRA 13:5)
(Bridges--Foundations and piers)

CHEREPKOV, F. I. PA 58T23

USSR/Chemistry - Sulfuric Acid Aug 1947
Chemistry - Absorption

"Absorption of Sulfuric Acid Vapor by Sulfuric Acid," F. I. Cherepkov, Candidate Tech Sci, NIUIF, 2 pp

"Khim Prom" No 8

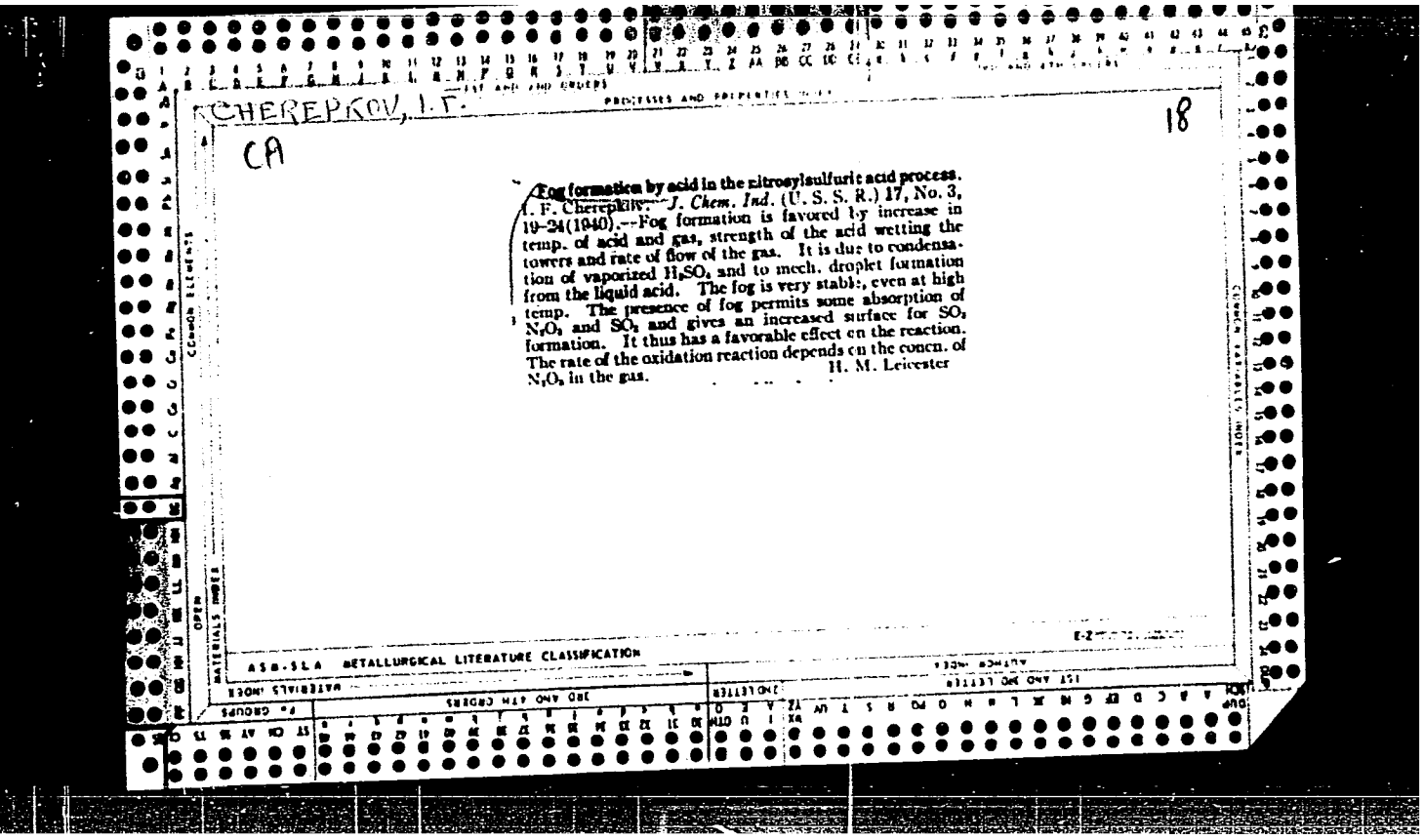
Discusses purification of gases in tower sulfuric acid installations, particularly separation of sulfuric acid fumes. Describes results of experiments conducted to determine conditions necessary for absorption of sulfuric acid fumes by sulfuric acid, where vapor content in gas medium does not depend on various factors put forth by Gay-Lussac.

[redacted]

58T23

O reshenii sistem lineynykh uravneniy metodom iteratsii. Matem. sb., 1 (43), (1936) 953-960.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Rashevskiy, P. K.
Moscow-Leningrad, 1948



CHEREPKOV, I. F.

18

CA

Fog formation by acid in the nitrosylsulfuric acid process. I. F. Cherepkov. *J. Chem. Ind.* (U. S. S. R.) 17, No. 3, 19–24(1940).—Fog formation is favored by increase in temp. of acid and gas, strength of the acid wetting the towers and rate of flow of the gas. It is due to condensation of vaporized H_2SO_4 and to mech. droplet formation from the liquid acid. The fog is very stable, even at high temp. The presence of fog permits some absorption of N_2O_3 and SO_2 and gives an increased surface for SO_2 formation. It thus has a favorable effect on the reaction. The rate of the oxidation reaction depends on the concn. of N_2O_3 in the gas.

H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Cherepkov IF

USSR/Chemical Technology. Chemical Products and Their Application. J-3
Sulfuric Acid, Sulphur and Its Compounds.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27416

Author : I.F. Cherepkov.
Inst :
Title : To the Question of the Dependence of Nitrose Density on Its Composition

Orig Pub: Khim. prom-st', 1956, No 3, 136-138

Abstract: The equation for the determination of the density of free H_2SO_4 in nitrose (N) on condition that there was no hydrolysis of $HSNO_5$, i.e., at a low temperature and a high H_2SO_4 content, was derived. Considering the presence of hydrolysis in natural N-s, the dependence of their density on the composition and temperature can be determined only experimentally. Basing on experimental data of I.N. Kuz'minykh and Ye.V. Andreyeva (Khim. prom-st', 1944, No 10-11), a nomograph of the dependence of the den-

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Card : 1/2

USSR/Chemical Technology. Chemical Products and Their Application. J-3
Sulfuric Acid, Sulphur and Its Compounds.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27416

sity of N on its composition and temperature, as well as graphs of the dependence of the density of N on its composition at 20° and the dependence of the initial H_2SO_4 on the density and composition of N at 20° were plotted.

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SOV/64-59-5-19/28

28(1)
AUTHOR: Cherepkov, I. F.

TITLE: Volume Determination of a Liquid According to Its Level in Horizontal Cylindrical Reservoirs

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 442-443 (USSR)

ABSTRACT: The liquid volume in a horizontal cylindrical reservoir is usually determined in industry by measuring the height of the liquid level, and thereupon reading the volume of the particular reservoir from respective tables. It often happens, because of the variety of reservoir constructions and the lack of common calculation methods, that complications occur for lack of a respective table. An approximative equation (1) as well as a special diagram (Fig) is suggested for calculations of that kind. The value of the liquid volume, obtained with (1) or with the diagram, has to be multiplied by a coefficient K, in case that the bottom of the reservoir is not plane but convex. The coefficient K may be obtained by equation (2). There is 1 figure.

ASSOCIATION: Nauchnyy institut po udobreniyam i insektofungitsidam imeni Ya. M. Samoylova (Scientific Institute of Fertilizers and

Card 1/2

SOV/64-59-5-19/28

Volume Determination of a Liquid According to Its Level in Horizontal Cylindrical Reservoirs

Insectofungicides (m. Ya. M. Samoylov)

Card 2/2

CHEREPKOV, I.F.

Vapor density of HNO_3 over mutual solutions of nitric and sulfuric acids. Khim.prom. no.8:708-709 D '59. (MIRA 13:6)

1. Nauchnyy institut po udobreniyam i insektofungisidam imeni professora Ya.V.Samoylova.
(Nitric acid) (Sulfuric acid) (Vapor density)

CHEREPKOV, I.F.; SYSLOV, N.I., red.

[Vapor pressure of nitrogen oxides over nitrose]Ob uprugosti parov okislov azota nad nitrozoi. Moskva, Laboratoriia nauchno-tekhn. informatsii, 1961. 11 p. (MIRA 15:12)
(Nitrogen oxide) (Vapor pressure)

CHEREPKOV, S.I.

"Start" and "Temp" microfilming cameras. NTI no.7:43-46 '64.
(MIRA 17:11)

USYUKIN, I.P.; AVER'YANOV, I.G.; UVAROVA, A.P.; Prinimali uchastiye: DOLGOV, A.A.; CHEREPKOVA, A.A.

Continuous method of the production of ammonium bicarbonate. Khim.prom. no.10:723-728 O '62. (MIRA 15:12)
(Ammoniumcarbonate)

GORSHKOV, N.P., nauchnyy sotr.; KOLYCHEV, L.I., nauchnyy sotr.; KOTOV, G.G., nauchnyysotr.; KUZ'MINA, V.I., nauchnyy sotr.; RUMYANTSEVA, A.V., nauchnyy sotr.; SELINA, N.G., nauchnyy sotr.; CHEREPKOVA, I.V., nauchnyy sotr.; POTAPOV, Kh.Ye., red.; OVCHINNIKOV, N.G., red.; PONOMAREVA, A.A., tekhn. red.

[Raising the level of the development of collective farm operation] Povyshenie urovnia razvitiia kolkhoznogo proizvodstva. Moskva, Izd-vo ekon. lit-ry, 1961. 236 p. (MIRA 15:2)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva (for Gorshkov, Kolychev, Kotov, Rumyantseva, Selina, Cherepkova, Kuz'mina).
(Farm management)

AFANAS'YEV, S.V.; PLINER, G.Ye.; CHEREPKOVA, K.F.

Investigating the recrystallization process and texture formation in cold-rolled strip of 50NP permalloy. Fiz. met. i metalloved. 16 no.2:251-255 Ag '63. (MIRA 16:8)

1. Leningradskiy staleprokatnyy zavod.
(Permalloys—Metallography)
(Crystallization)

ACCESSION NR: AP4044141 S/0129/64/000/008/0044/0046

AUTHOR: Beloruchev, L. V.; Karmanova, Ye. G.; Knoroz, M. M.; Kuleshova, V. D. Cherepkova, K. F.

TITLE: Phase transformation and recrystallization in a Permendur-type alloy

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1964, 44-46

TOPIC TAGS: alloy, iron cobalt alloy, Permendur, phase transformation, alloy recrystallization/ alloy EP207

ABSTRACT: 2 x 3.2 x 50 mm rectangular samples of alloy EP207 (approx. 50% Fe and 50% Co) were examined dilatometrically to establish the lower limits of $\alpha \rightleftarrows \beta$-conversion and recrystallization. The samples, which were preannealed at 830C for 5 hrs. in a vacuum-oven and water-quenched, were heated at a rate of 4-5 degrees/min. to 1050C in a dilatometer, held at that temperature for 15-20 min. and cooled at a rate of 20 degrees/min. From dilatometric curves for the process (not shown) it was found that $\alpha \rightarrow \beta$ conversion sets in at 915-930C during heating and is considerably retarded during cooling. The values of the coefficient of linear expansion at 100-800C were also determined for four different melts from the curves. In a study of recrystallization, 0.2 mm thick alloy samples which had been deformed to 90% by cold rolling were annealed at 650, 680, 700, 720, 740, 760, 780, 820, 860 and 900C for 1 hr. at 1×10^{-4}-1×10^{-5} mm Hg in a vacuum oven. By examining

Card 1/2

ACCESSION NR: AP4044141

the microstructure, recrystallization was found to begin at 700-720C, and the α-phase to be in evidence at 860C. From more accurate data obtained for phase conversion temperatures, 850C was selected as the optimum temperature for intermediate thermal treatment of hot rolled alloy strips, and annealing at 830C for 5 hrs. was found to ensure adequate technical characteristics in 0.2 mm thick strips when the alloy impurity content was not above 0.60%. Orig. art. has: 3 tables and 1 figure.

ASSOCIATION: Severo-zapadny*y zaochny*y politekhnicheskiy institut (Northwest Correspondence Polytechnical Institute); Leningradskiy staleprokatny*y zavod (Leningrad Steel Rolling Mill)

SUBMITTED: 00 ENCLOSURE: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 002

Card 2/2

L 00[illegible]-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/HW
ACC NR: AP6027782 SOURCE CODE: UR/0126/66/022/001/0027/0031

AUTHOR: Afanas'yev, S. V.; Barsukov, V. N.; Pliner, G. Ye.; Cherepkova, K. F.

ORG: Leningrad Steel Rolling Plant (Leningradskiy staleprokatnyy zavod)

TITLE: Recrystallization and magnetic properties of permalloy 65N

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 1, 1966, 27-31

TOPIC TAGS: permalloy, metal recrystallization, magnetic property, magnetic permeability / / permalloy 65N

ABSTRACT: Permalloy 65N (0.02% C, 0.44% Mn, 0.21% Si, 0.008% P, 0.007% S, 65.5% Ni, remainder Fe) differs from the other binary Fe-Ni alloys in that it acquires high magnetic properties only after its heat treatment in a magnetic field, due to the attendant directional ordering of its atoms which results in the rise of magnetic anisotropy. In this connection, the authors investigated the effect of the degree of deformation (from 17 to 98.6%) and temperature of annealing (from 700 to 1200°C) on the structure of this alloy and on its magnetic properties before and after thermomagnetic treatment. The thermomagnetic treatment itself was carried out in a vacuum (residual pressure 10^{-2} mm Hg) at 650°C in a 10-oersted magnetic field. Grain

Card 1/3 UDC: 669.15'24.018.58

size was examined metallographically and magnetic properties were measured by the ballistic d-c method. Findings: on the basis of the concomitantly plotted recrystallization diagram (Fig. 1) it is established that three basic types of recrystallization structures may be induced in permalloy 65N for the degrees of deformation and temperatures considered. Thus, for the

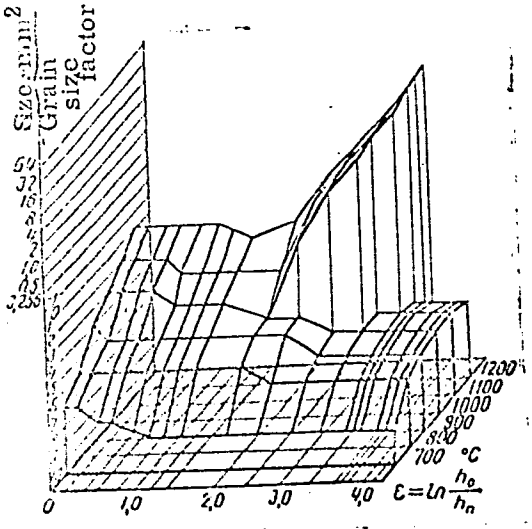


Fig. 1. Recrystallization diagram of the alloy 65N

deformation $\epsilon < 2.0$ (85%) grain size monotonically increases with temperature, the recrystallized grains display non-ordered orientation and the recrystallization is either primary or preliminary; For $\epsilon > 2.0$ annealing temperatures below 1000°C lead to the formation of a cubic texture of primary recrystallization; and for $\epsilon \sim 2.0$-2.3 (85-90%), following annealing at 1000°C, large extended grains of secondary recrystallization are observed. The specimens displaying the maximum magnetic permeability (450,000-500,000 gauss/oe), the most rectangular hysteresis loop and the lowest coercive force (~0.002 oe) were found to be those which, prior to their thermomagnetic treatment, had a secondary recrystallization structure with maximally large grains. "The authors are indebted to the late Professor V. S. Mes'kin for a critical examination of the MS and for his interest in this project." Orig. art. has: 3 figures.

SUB CODE: 11, 20, 13/ SUBM DATE: 25Nov64/ ORIG REF: 008/ OTH REF: 002

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308410015-9"

CHEREPNENKO, N.I.

SOV-107-58-8-19/53

AUTHORS: Prokhorov, V. Chairman of the SW and VHF Sections; Cherepnenko, N., Chairman of the Radio Club Council,; Rudakov, A., Head of Amur Oblast Radio Club; Shkurov, Ye., Chairman of the Amur Oblast Committee of DOSAAF.

TITLE: Are the Radio Amateurs of the Zero Region at Fault? (Vinovaty li radiolyubiteli nulevogo rayona?)

PERIODICAL: Radio, 1958, Nr 8, p 14 (USSR)

ABSTRACT: The authors explain the points system used in amateur radio competitions and show how it is biased against radio operators in the zero region (Far East and Siberia) compared with operators in the European part of the USSR. To rectify this, a new points system is suggested in which the points awarded increase with the distance over which contact is made. The present point system takes into account the disappointing results achieved in competitions by zero region operators.

1. Radio operators--Performance

Card 1/1

PROKHOROV, V.; CHEREPNENKO, N.; RUDAKOV, A.; SHKUROV, Ye.

Is it the fault of the zero-zone radio amateurs? Radio no.8:14 Ag '58. (MIRA 11:9)

1. Predsedatel' sektsii korotkikh i ultrakorotkikh voln (KV i UKV) Amurskogo oblastnogo radiokluba (for Prokhorov). 2. Predsedatel' soveta Amurskogo oblastnogo radiokluba (for Cherepnenko). 3. Nachal'nik Amurskogo oblastnogo radiokluba (for Rudakov). 4. Predsedatel' Amurskogo oblastnogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Shkurov).
(Radio shortwave)

AUTHOR: Cherepnenko, N.I., Engineer SOV-111-58-10-19/29

TITLE: Combining the Operation of Communication and Radio Relay Equipment (Sovmeshchayem obsluzhivaniye sredstv svyazi i radiofikatsii)

PERIODICAL: Vestnik svyazi, 1958, Nr 10, pp 27-28 (USSR)

ABSTRACT: In the Amur Oblast', telephone lines, electric power lines and the wires for radio communication within villages are fastened on the same poles. These lines have a length of 900 km. Central radio reception points are located in the same room with telegraph stations, post offices, amplyfying points, etc. In the article, the different districts of the oblast' and their local conditions are mentioned. In many towns the telephone operators also handle the radio relay equipment. The equipment is not always used in a rational way. An increase in wages is seldom paid for com-

Card 1/2

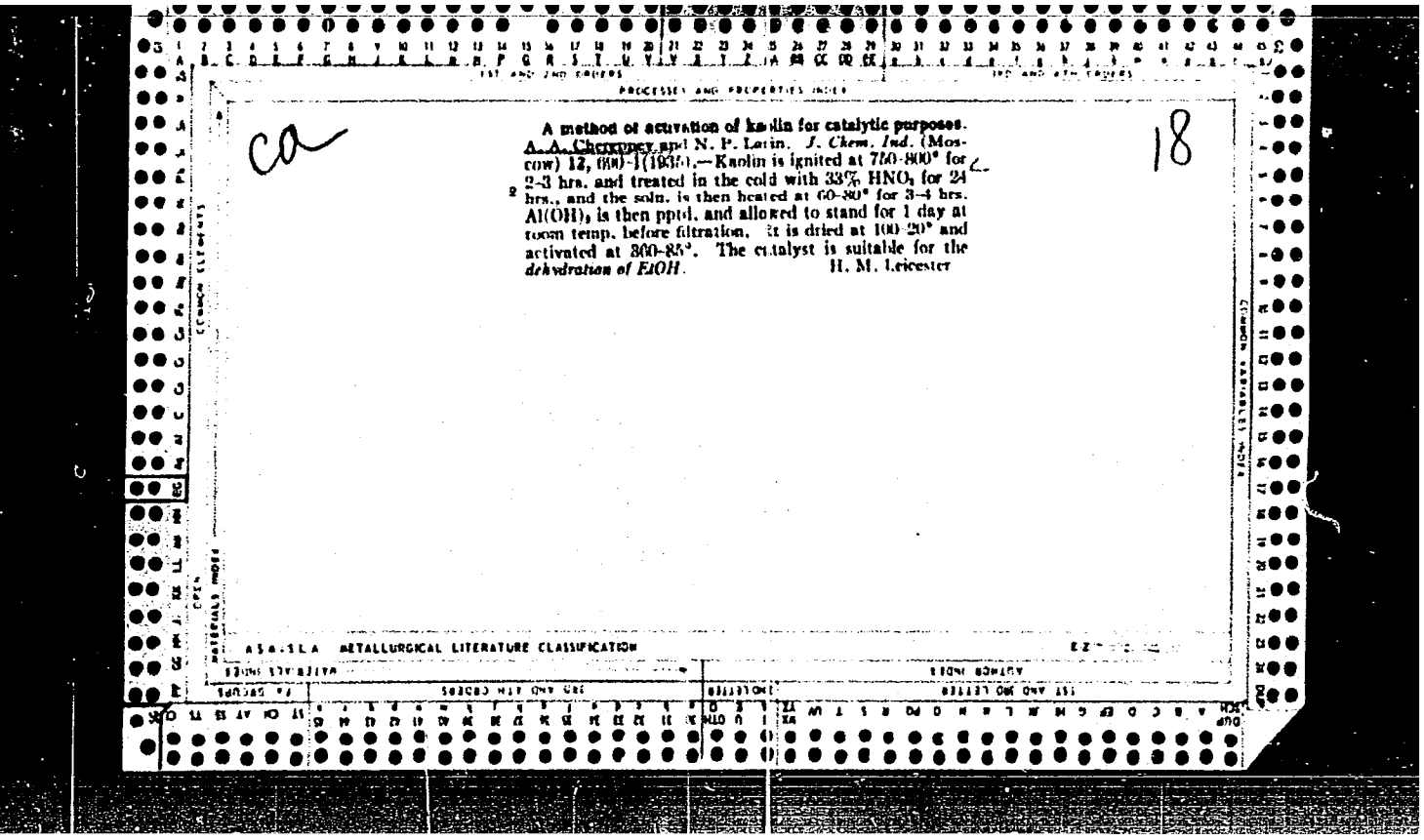
Combining the Operation of Communication and Radio Relay Equipment

bined work in the two sections and additional leave is not granted.
There are 3 photos.

1. Communication systems--USSR 2. Communication systems--Management 3. Communication systems--Performance 4. Communication systems --Equipment

Card 2/2

ASSOCIATION : Izmeritel'naya gruppa Amurskoy direktsii radio-translyatsionnoy svyazi.



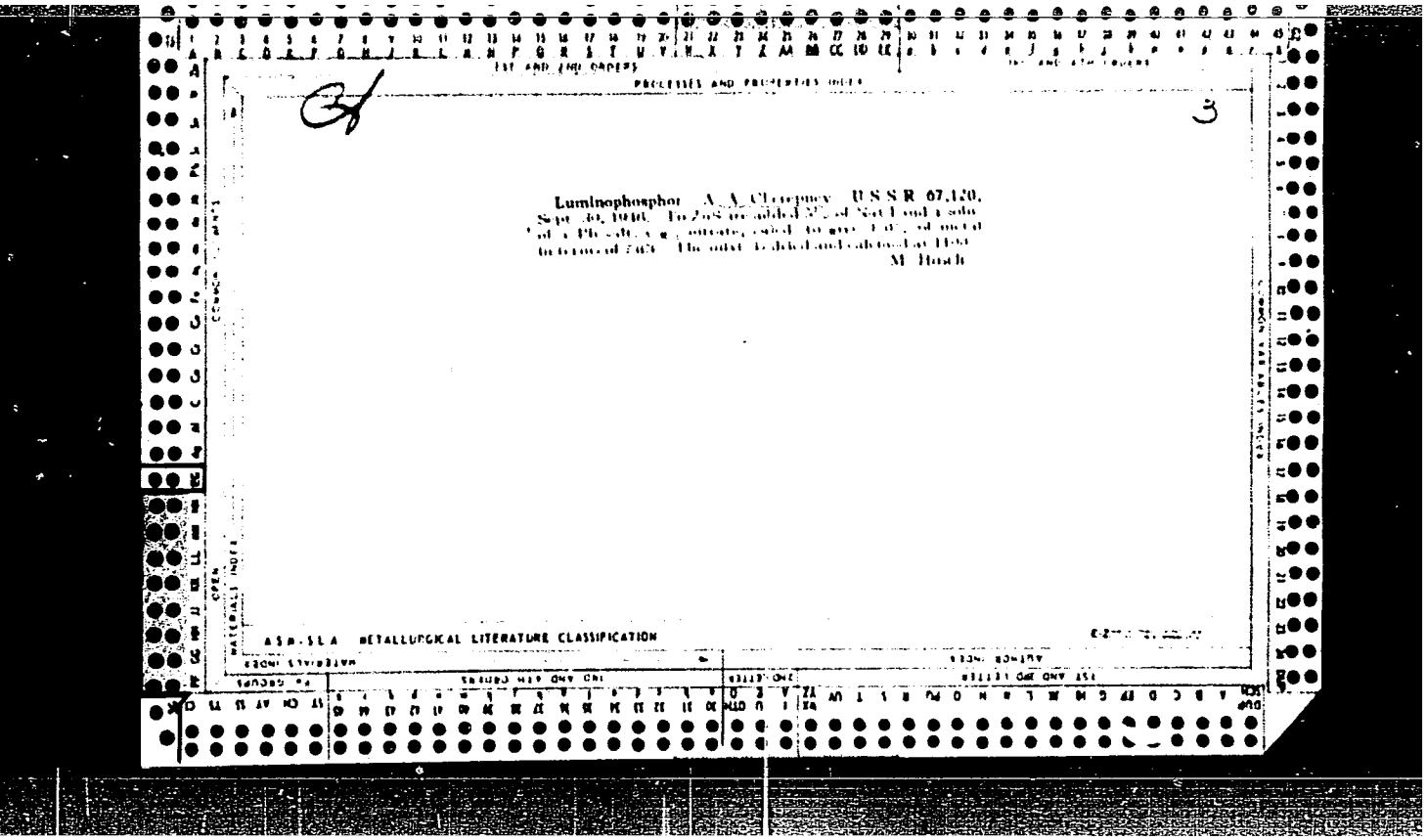
ca

18

A method of activation of kaolin for catalytic purposes. A. A. Cherepnev and N. P. Lavin. *J. Chem. Ind.* (Moscow) **12**, 60)-1(1935).—Kaolin is ignited at 750-800° for 2-3 hrs. and treated in the cold with 33% HNO_3 for 24 hrs., and the soln. is then heated at 60-80° for 3-4 hrs. $Al(OH)_3$ is then pptd. and allowed to stand for 1 day at room temp. before filtration. It is dried at 100-20° and activated at 300-85°. The catalyst is suitable for the *dehydration of EtOH*. H. M. Leicester

2

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Zinc sulfide luminophors containing lead. A. A Cherepnev. *Doklady Akad. Nauk S.S.S.R.* **50**, 397–10 (1947); *Chem. Zentr.* (Russian Zone Ed.) **1948**, II, 274–5; cf. *C.A.* **43**, 1265d.—ZnS luminophors were prepd. in the usual manner with 1–7% Pb being added to the ZnS before heating. A part of the Pb was volatilized during heating. The optimum amt. of Pb was 5%. The Hg lamp PRK 2 was used as the source of ultraviolet (365 mμ). The brightness of the luminescence was measured with a Pulfrich photometer; extinction was measured with a GOI-NPT photometer. The formula $It^{\alpha} = A$ was used to calc. decay at room temp. The luminescence was a greenish blue; a slight amt. of Cu (5×10^{-4} g. Cu per g. ZnS) changed it to a yellow green. Most of the light was emitted during the first 10 sec. Considerably more was emitted from the less-strongly heated (900°) luminophors than from those heated to a higher temp. (1100°). α was comparatively const. (1–1.7). The addn. of the Cu increased α from 1.0 to 1.4. A increased with the temp. A peculiarity of the Pb-ZnS phosphors is that they glow under the influence of red and infrared radiation. This glow shows inertia, as evidenced in an afterglow. Repeated glows with the same α were obtained. App. used for this purpose (after preliminary excitation with 365 mμ) was an elec. bulb with a Schott filter (690–850 mμ) or an ebonite plate 0.5 mm. thick.

M. G. Moore

CA

Intensity and spectral distribution of the radiation from zinc sulfide luminophors with various activators. S. A. Fridman, A. A. Cherepnev, and T. S. Dobrolyubskaya (Lebedev Inst. Phys., Moscow). *Doklady Akad. Nauk* SSSR 57, 651-4(1947). *Chem. Zentr.* 1947, II, 183; cf. C.A. 42, 5618. The luminophors were excited by a quartz Hg-vapor lamp. Optimum concns. for the following activators in ZnS are reported. Ag, Cu, Zn, Mn, Fe, Co, and Ni. In all cases the intensity of the light was greater for specimens which had been heated at 900° than for those heated at 1200°. An asymmetrical brightness curve was obtained for Cu as an activator, the decrease in brightness in the region of higher concn. being steeper than the increase in the region of lower concn. Of all the activators tested, Cu gave the best results. The addn. of Ag to ZnS already contg. Cu reduced the luminescence only slightly, while the addn. of Mn to the same combination reduced it sharply. The effects of the metals of the Fe group, especially of Co, were still more pronounced. The spectra of specimens heated at 900° showed the characteristic bands of Zn; at higher temps. (1100-1200°) these became weaker. The position of the maxima of the bands characteristic of the individual activaters was not influenced by the temp. to which the specimens were heated. In the ZnS-Cu phosphors the max. was displaced toward the short wave lengths at concns. above the optimum. The addn. of a second activator reduced the intensity of the Cu band. When several activators were introduced the spectral curves showed complicated reciprocal effects. M. G. Moore

FRIDMAN, S. A., CHEREPNEV, A. A., AND DOBROLYUBSKAYA, T. S.

"Phosphorescence of Zinc Sulfide Phosphors Containing Different Activators," Dok. AN, 57, No. 6, 1947

CHERETNEV, A. A.

USSR/Physics Dec 47

Luminescent Materials

Spectrophotometry

"The Relationship of the Zinc and Copper Bands of Luminescence in Zinc Sulphide Luminophors," S. A. Fridman, A. A. Cherpnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Pavlov, Acad Sci USSR, 3¼ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Spectrophotometric studies of temperature behavior and interrelationship of zinc and copper pole of luminescence in zinc sulphide luminphors during a high temperature state in surrounding media. Also spectral analysis of characteristics which occur at various temperatures. Submitted by Academician S. I. Vavilov, 16 Jul 1947.

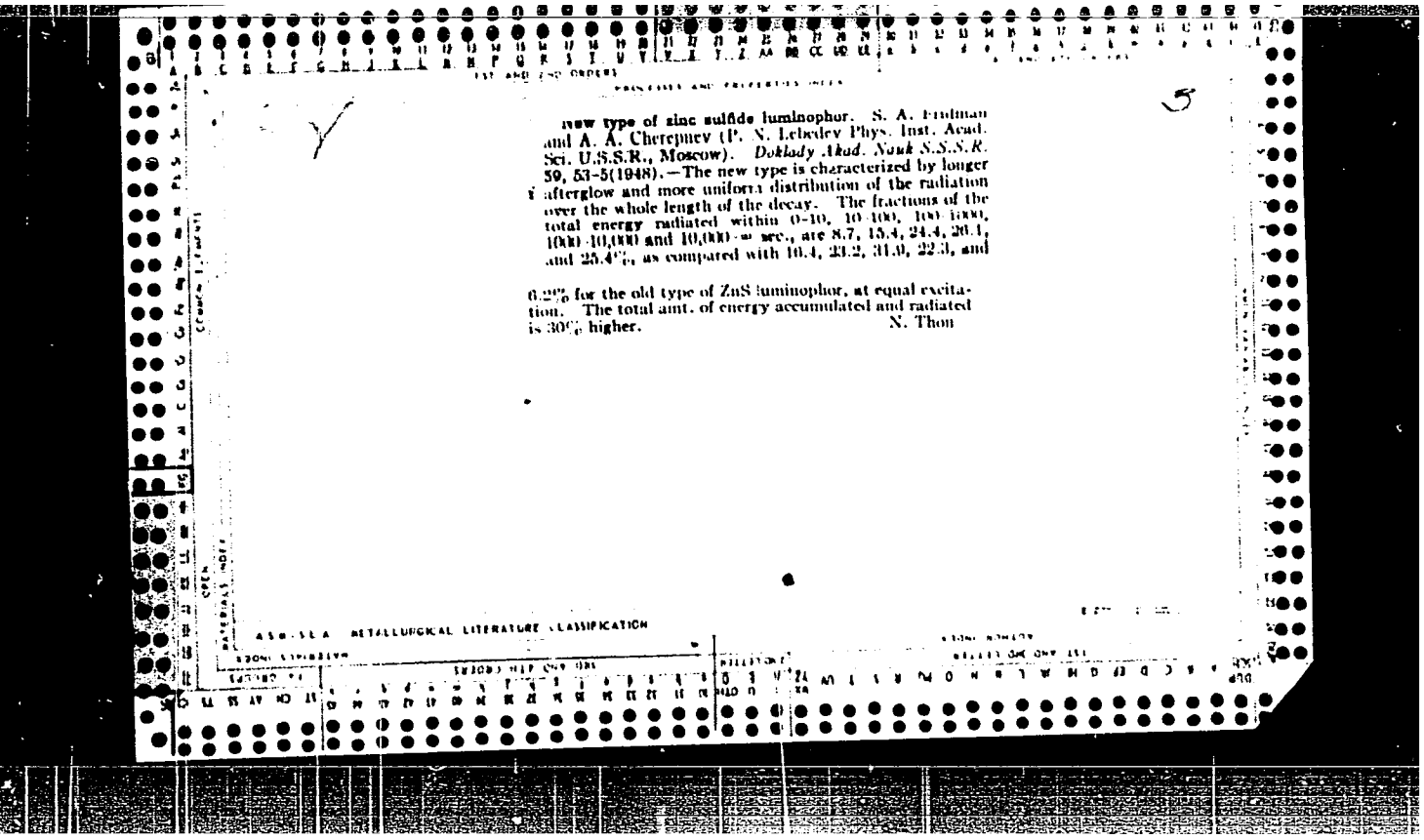
PA 60T113

CA

3-M

Relations between the zinc and copper luminescence bands in zinc sulfide luminophors. S. A. Fridman, A. Cherepnev, and T. S. Dobrolyubskaya. *Doklady Akad. Nauk S.S.S.R.* **58**, 1341–4(1947); *Chem. Zentr.* (Russia Zone Ed.) **1949**, I, 560; cf. *C.A.* **42**, 5774*i*; **44**, 7151*i*.—A study was made of the "stationary" luminescence by using an exciting wave length of 365 mμ and a temp. range from room temp. to 350°. The 465-mμ band (Zn as activator) almost completely disappeared at 150–200°, while the Cu band still showed almost the same intensity at this temp. as at room temp. At a Cu concn. of 10^{-4} g. per g. of ZnS even at room temp. only the Cu band is visible. For luminophors heat-treated at a low temp. this band showed a max. intensity at room temp. When heat-treatment was at 800° and higher, the max. was at 100–150°. The Cu band appeared in pure ZnS in specimens heated to 500°. The spectra of specimens heat-treated at 500° showed a band with a max. at 495 mμ, which is ascribed to ZnO. These results can be used for the *detn.* of small amts. of *Cu* in *ZnS*.

M. G. Moore



new type of zinc sulfide luminophor. S. A. Fridman and A. A. Cherepnev (P. N. Lebedev Phys. Inst. Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 59, 53-5(1948).—The new type is characterized by longer afterglow and more uniform distribution of the radiation over the whole length of the decay. The fractions of the total energy radiated within 0-10, 10-100, 100-1000, 1000-10,000 and 10,000- ∞ sec., are 8.7, 15.4, 24.4, 26.1, and 25.4%, as compared with 10.4, 23.2, 31.0, 22.3, and 0.2% for the old type of ZnS luminophor, at equal excitation. The total amt. of energy accumulated and radiated is 30% higher. N. Thon

CHEREPNEV, A. A.

PA 36/49T78

USSR/Physics
Luminophors
Cobalt

Sep 48

"Cobalt Bearing Zinc-Sulfide Luminophors," A. A. Cherepnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 3

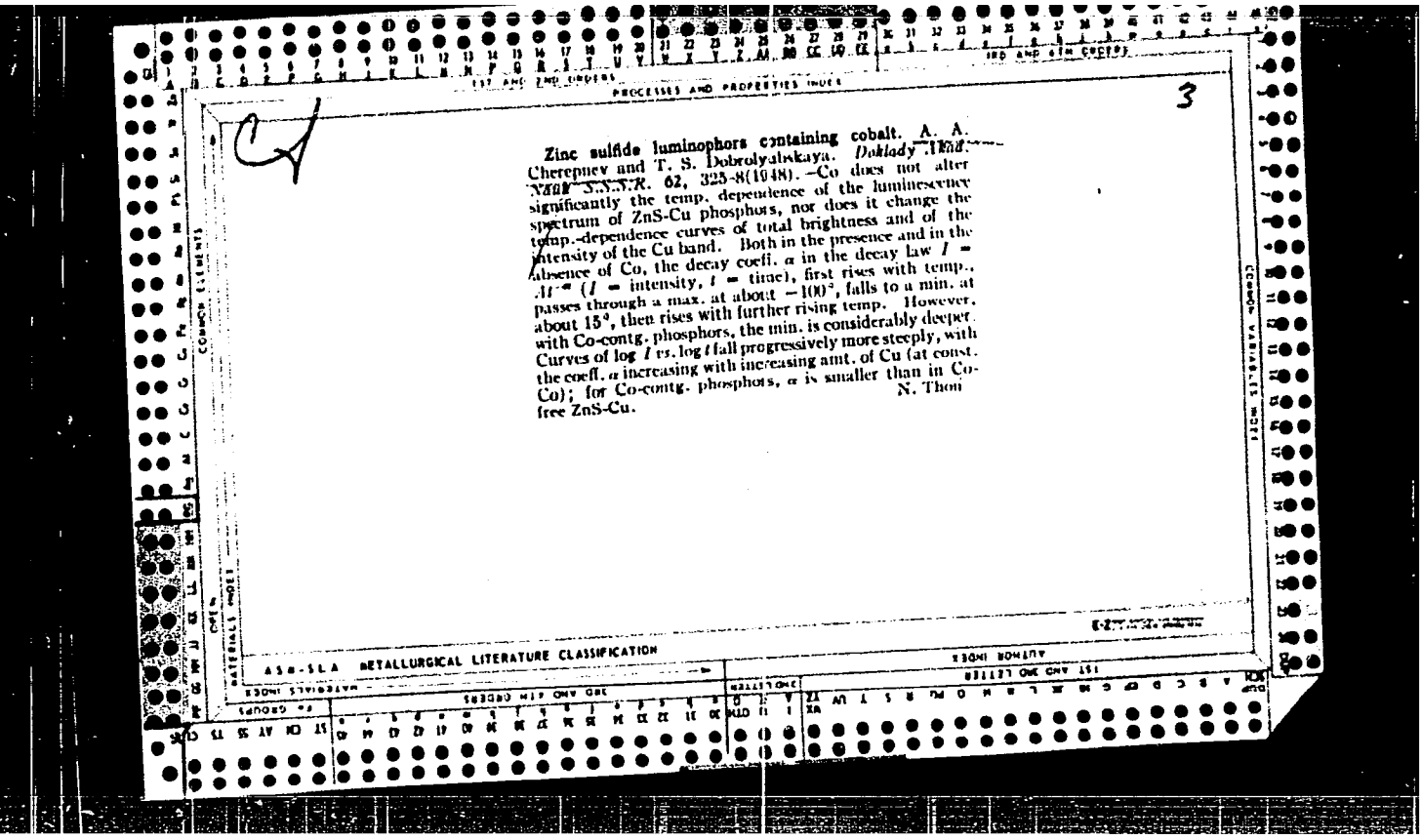
Graphs and describes data contrasting ZnS CuCo luminophors with those not containing cobalt, according to following dependencies: (1) dependence of spectral distribution and total brilliance of luminescence upon temperature, (2) effect of temperature of the medium on extinguishing of the

36/49T78

USSR/Physics (Contd) Sep 48

component, and (3) dependence of postluminescence upon the concentration of copper. Submitted by Acad S. I. Vavilov, 17 Jul 48.

36/49T78

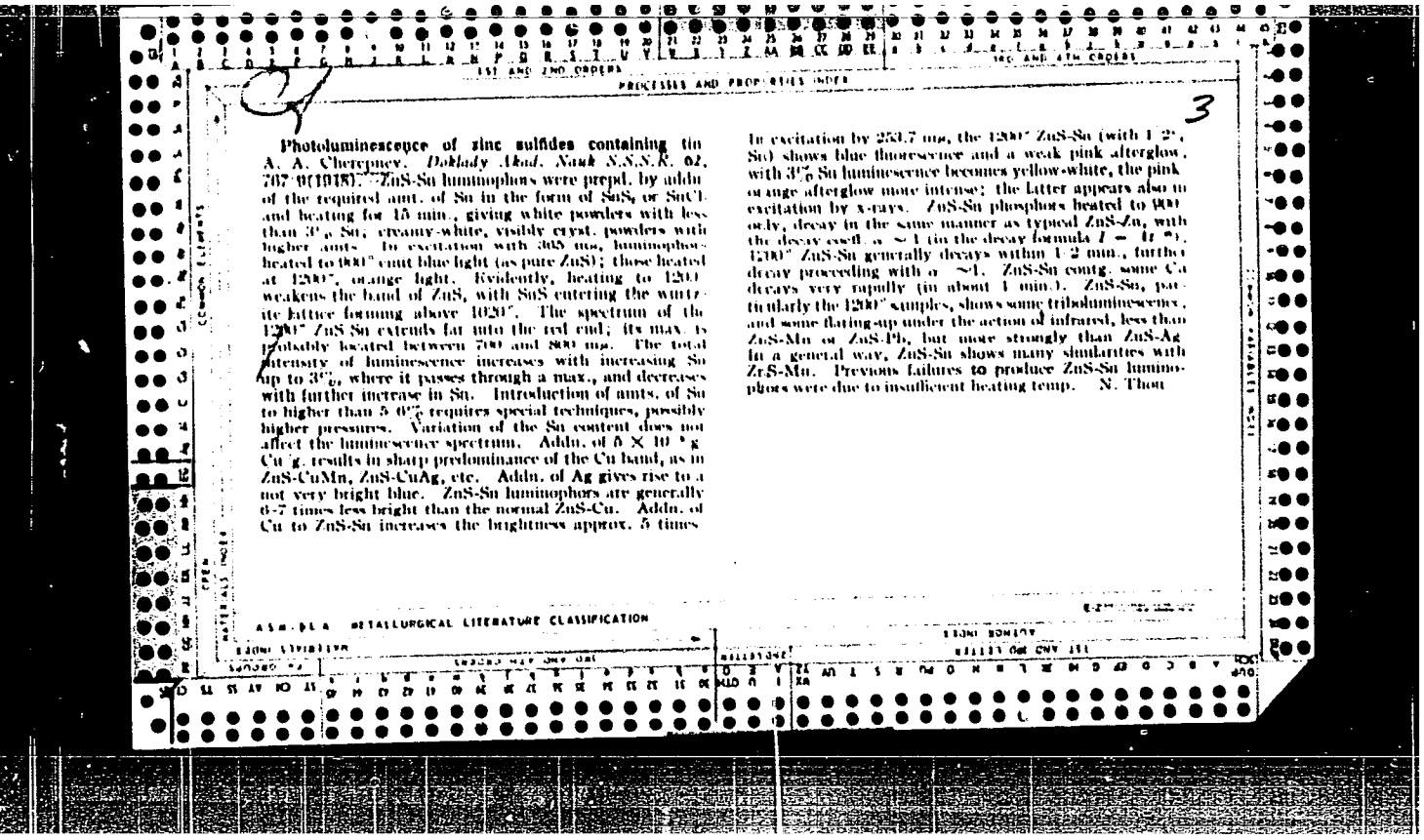


PROCESSES AND PROPERTIES INDEX

3

Zinc sulfide luminophors containing cobalt. A. A. Cherepnev and T. S. Dobrolyalskaya. *Doklady Akad. Nauk S.S.S.R.* 62, 325-8(1948).—Co does not alter significantly the temp. dependence of the luminescence spectrum of ZnS-Cu phosphors, nor does it change the temp.-dependence curves of total brightness and of the intensity of the Cu band. Both in the presence and in the absence of Co, the decay coeff. α in the decay law $I = At^{-\alpha}$ (I = intensity, t = time), first rises with temp., passes through a max. at about −100°, falls to a min. at about 15°, then rises with further rising temp. However, with Co-contg. phosphors, the min. is considerably deeper. Curves of log I vs. log t fall progressively more steeply, with the coeff. α increasing with increasing amt. of Cu (at const. Co); for Co-contg. phosphors, α is smaller than in Co-free ZnS-Cu. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Photoluminescence of zinc sulfides containing tin A. A. Cherepnev. *Doklady Akad. Nauk S.S.S.R.* 62, 707-9(1948). ZnS-Sn luminophors were prepd. by addn. of the required amt. of Sn in the form of SnS_2 or $SnCl_4$ and heating for 15 min., giving white powders with less than 3% Sn; creamy-white, visibly cryst. powders with higher amts. In excitation with 365 mμ, luminophors heated to 900° emit blue light (as pure ZnS); those heated at 1200°, orange light. Evidently, heating to 1200° weakens the band of ZnS, with SnS entering the wurtzite lattice forming above 1020°. The spectrum of the 1200° ZnS-Sn extends far into the ir. end; its max. is probably located between 700 and 800 mμ. The total intensity of luminescence increases with increasing Sn up to 3%, where it passes through a max., and decreases with further increase in Sn. Introduction of amts. of Sn to higher than 5.0% requires special techniques, possibly higher pressures. Variation of the Sn content does not affect the luminescence spectrum. Addn. of 5×10^{-5} g Cu/g. results in sharp predominance of the Cu band, as in ZnS-CuMn, ZnS-CuAg, etc. Addn. of Ag gives rise to a not very bright blue. ZnS-Sn luminophors are generally 6-7 times less bright than the normal ZnS-Cu. Addn. of Cu to ZnS-Sn increases the brightness approx. 5 times. In excitation by 253.7 mμ, the 1200° ZnS-Sn (with 1.2% Sn) shows blue fluorescence and a weak pink afterglow, with 3% Sn luminescence becomes yellow-white, the pink orange afterglow more intense; the latter appears also in excitation by x-rays. ZnS-Sn phosphors heated to 900° only, decay in the same manner as typical ZnS-Zn, with the decay coeff. $\alpha \sim 1$ (in the decay formula $I = It^{-\alpha}$). 1200° ZnS-Sn generally decays within 1-2 min., further decay proceeding with $\alpha \sim 1$. ZnS-Sn contg. some Cu decays very rapidly (in about 1 min.). ZnS-Sn, particularly the 1200° samples, shows some triboluminescence, and some flaring-up under the action of infrared, less than ZnS-Mn or ZnS-Pb, but more strongly than ZnS-Ag. In a general way, ZnS-Sn shows many similarities with ZnS-Mn. Previous failures to produce ZnS-Sn luminophors were due to insufficient heating temp. N. Thon

CHEREPNEV, A.A.

60/49T107

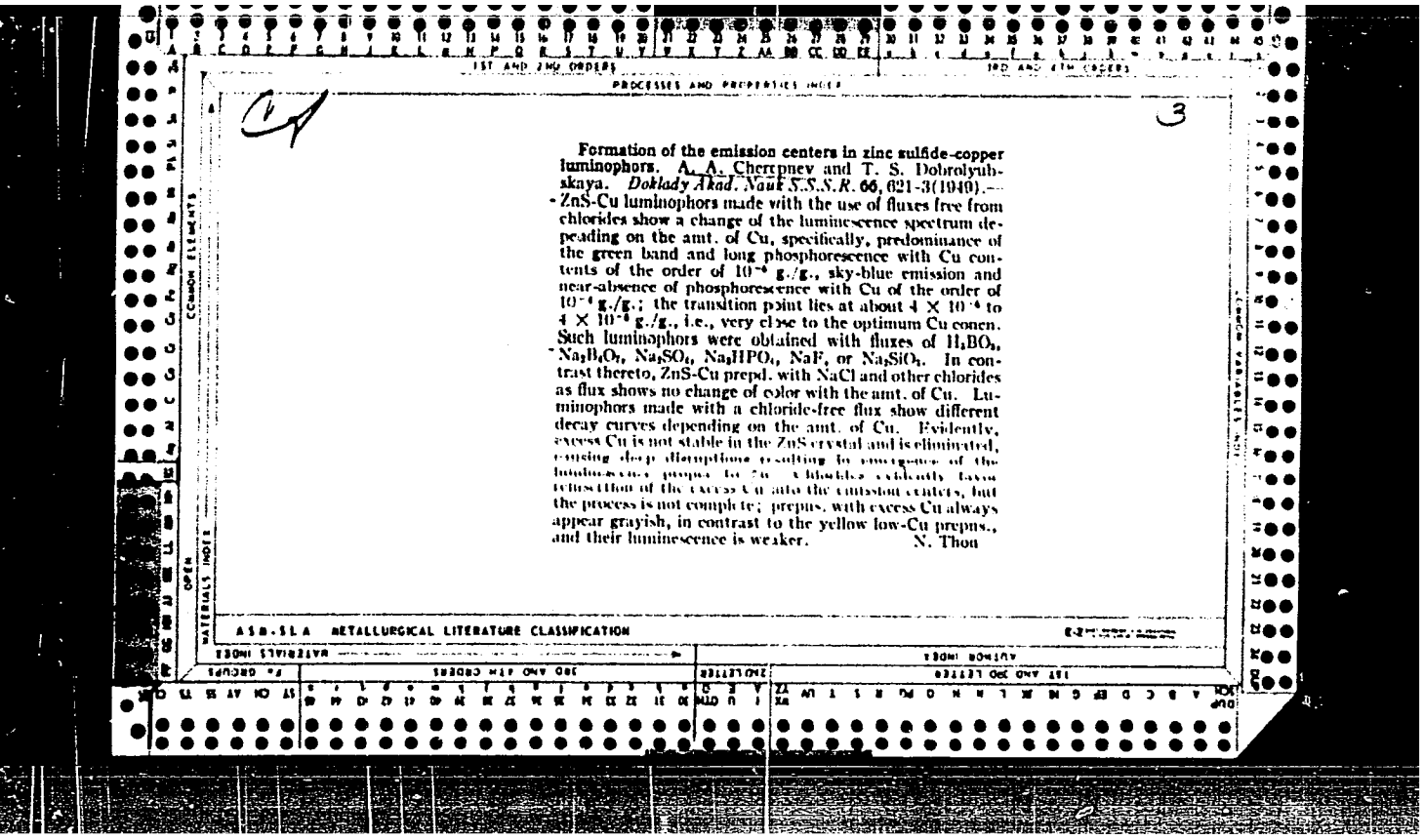
USSR/Physics Oct 48
Luminescence
Photoluminescence

"Photoluminescence of Stanniferous Zinc Sulfides," A. A. Cherepnev, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 2 3/4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 6

ZnSSn compounds have a small triboluminescence and a small flash under the action of red (or infrared) rays. Special property of stannic compounds is a deeper red zone of luminescence. Submitted by Acad S. I. Vavilov 31 Aug 48.

60/49T107



PROCESSES AND PROPERTIES INDEX

3

Formation of the emission centers in zinc sulfide-copper luminophors. A. A. Cherepnev and T. S. Dobrolyubskaya. *Doklady Akad. Nauk S.S.S.R.* **66**, 621-3(1949).—ZnS-Cu luminophors made with the use of fluxes free from chlorides show a change of the luminescence spectrum depending on the amt. of Cu, specifically, predominance of the green band and long phosphorescence with Cu contents of the order of 10^{-6} g./g., sky-blue emission and near-absence of phosphorescence with Cu of the order of 10^{-4} g./g.; the transition point lies at about 4×10^{-5} to 4×10^{-6} g./g., i.e., very close to the optimum Cu conen. Such luminophors were obtained with fluxes of H_3BO_3, $Na_2B_4O_7$, Na_2SO_4, Na_2HPO_4, NaF, or Na_2SiO_3. In contrast thereto, ZnS-Cu prepd. with NaCl and other chlorides as flux shows no change of color with the amt. of Cu. Luminophors made with a chloride-free flux show different decay curves depending on the amt. of Cu. Evidently, excess Cu is not stable in the ZnS crystal and is eliminated, causing deep disruptions resulting in emergence of the luminescence proper to Cu. Chlorides evidently favor reabsorption of the excess Cu into the emission centers, but the process is not complete; prepns. with excess Cu always appear grayish, in contrast to the yellow low-Cu prepns., and their luminescence is weaker. N. Thon

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CHEREPNEV, A. A.

PA 46/49T90

USSR/Physics
Luminescence
Luminophors

Jun 49

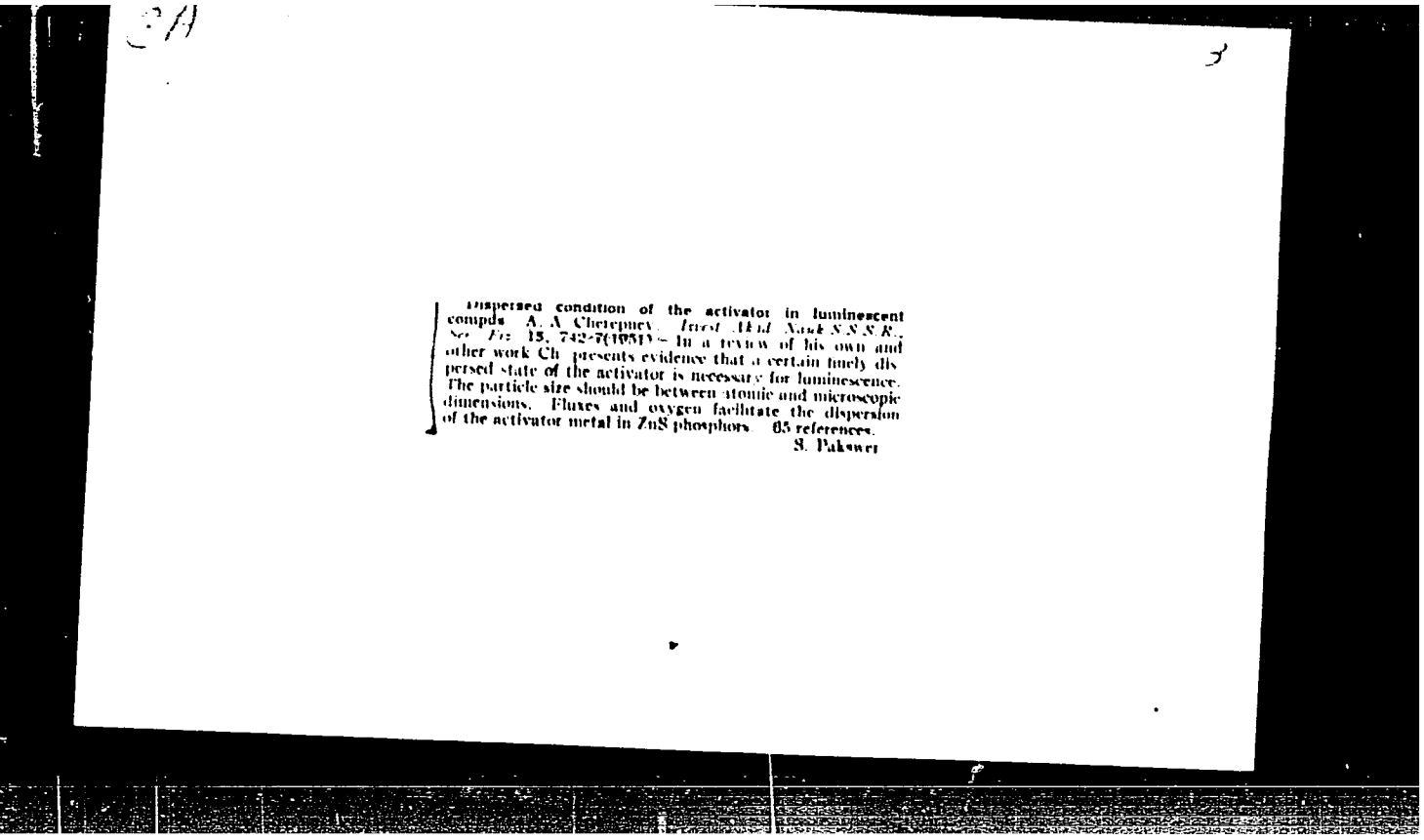
"Problem of the Formation of Luminescence Centers in ZnS-Cu Luminophors," A. A. Cherepnev, T. S. Bobrol-yubskaya, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 4

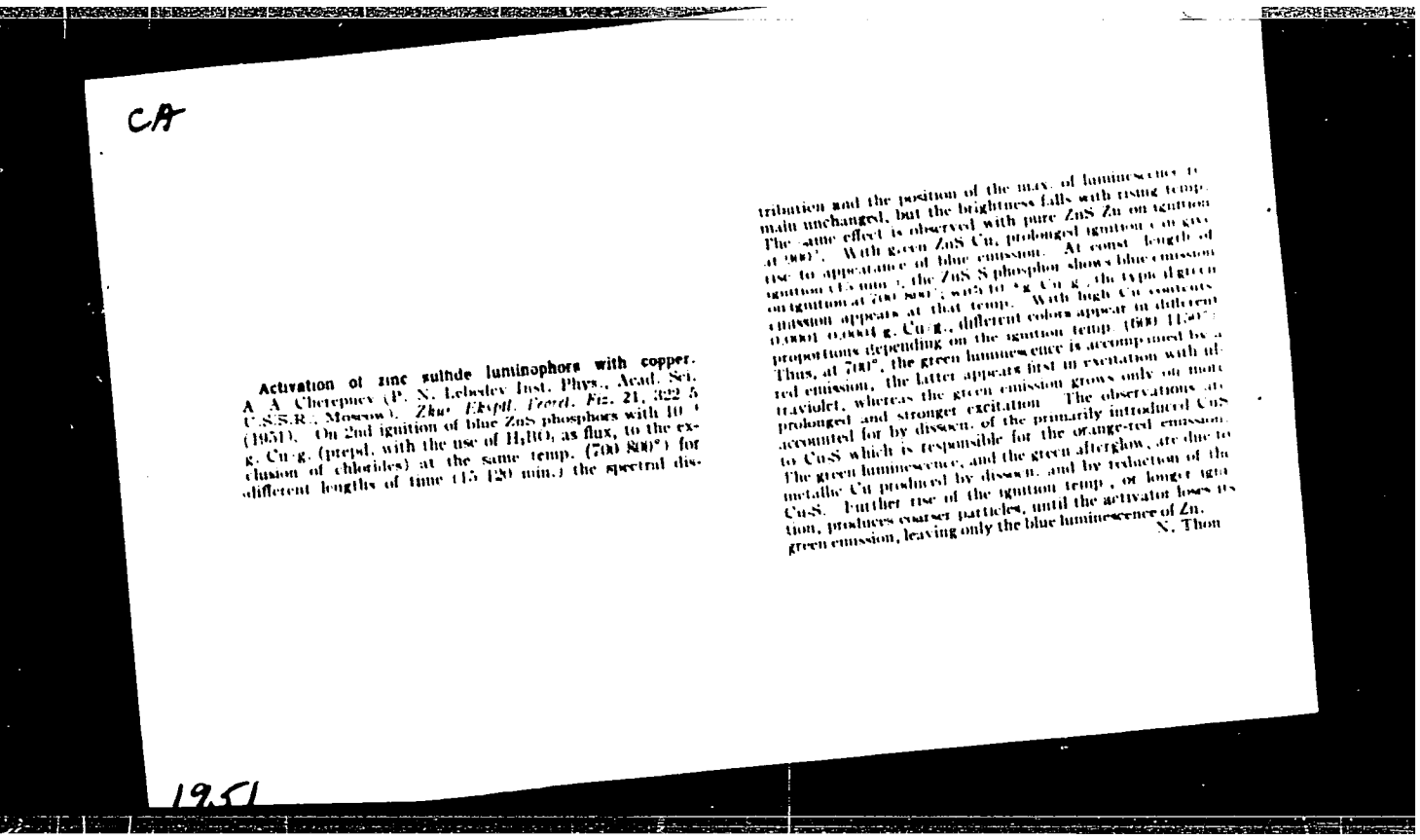
Formation of luminescence centers in ZnS·Cu luminophors occurs in firing when crystal structure is also formed. Fusing agent is of great importance in this process. Typical ZnS-Cu luminophors are prepared

with chloride fusing agents (chiefly NaCl, but also $BaCl_2$, $CaCl_2$, $MgCl_2$, KCl, and combinations). Experimented with other fusing agents, namely, boric acid. borax, sodium sulfate, double-substituted sodium phosphate, sodium fluoride, and sodium silicate. Submitted by Acad S. I. Vavilov, 1 Apr 49.

46/49T90



Dispersed condition of the activator in luminescent compds. A. A. Cheteprnev. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 15, 742-7(1951).—In a review of his own and other work Ch. presents evidence that a certain finely dispersed state of the activator is necessary for luminescence. The particle size should be between atomic and microscopic dimensions. Fluxes and oxygen facilitate the dispersion of the activator metal in ZnS phosphors. 85 references.
S. Pakswer



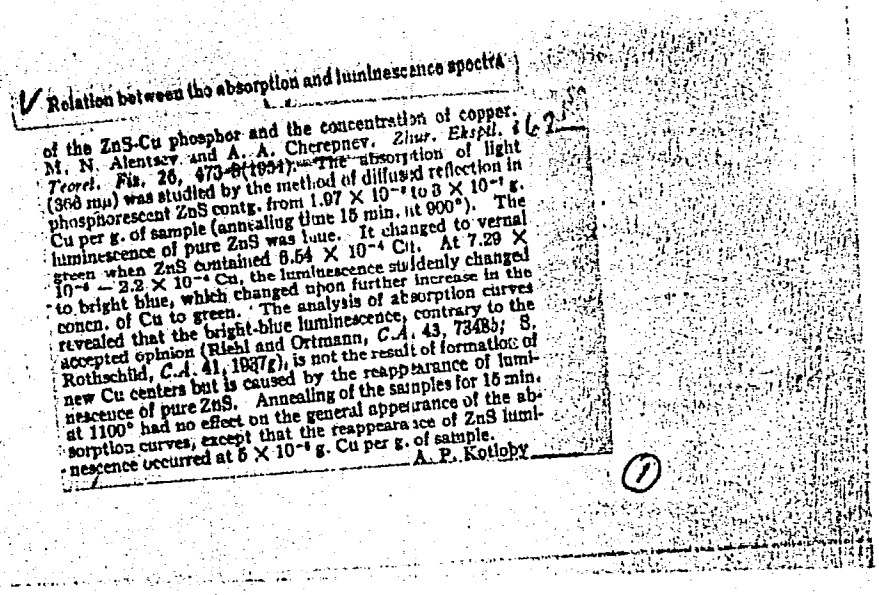
CA

Activation of zinc sulfide luminophors with copper. A. A. Cherepnev (P. N. Lebedev Inst. Phys., Acad. Sci. U.S.S.R., Moscow). *Zhur. Eksptl. Teoret. Fiz.* 21, 322-5 (1951). On 2nd ignition of blue ZnS phosphors with 10⁻⁴ g. Cu/g. (prepd. with the use of H_3BO_3 as flux, to the exclusion of chlorides) at the same temp. (700-800°) for different lengths of time (15-120 min.) the spectral distribution and the position of the max. of luminescence re- main unchanged, but the brightness falls with rising temp. The same effect is observed with pure ZnS-Zn on ignition at 900°. With green ZnS-Cu, prolonged ignition can give rise to appearance of blue emission. At const. length of ignition (15 min.), the ZnS-S phosphor shows blue emission on ignition at 700-800°; with 10⁻⁴ g. Cu/g., the typical green emission appears at that temp. With high Cu contents (0.001-0.004 g. Cu/g., different colors appear in different proportions depending on the ignition temp. (600-1150°). Thus, at 700°, the green luminescence is accompanied by a red emission, the latter appears first in excitation with ultraviolet, whereas the green emission grows only on more prolonged and stronger excitation. The observations are accounted for by dissocn. of the primarily introduced CuS to Cu₂S which is responsible for the orange-red emission. The green luminescence, and the green afterglow, are due to metallic Cu produced by dissocn. and by reduction of the Cu-S. Further use of the ignition temp., or longer ignition, produces coarser particles, until the activator loses its green emission, leaving only the blue luminescence of Zn.

N. Thon

19.51

CHEREPNEV, A. A.



Relation between the absorption and luminescence spectra of the ZnS-Cu phosphor and the concentration of copper. M. N. Alentsev and A. A. Cherepnev. *Zhur. Eksptl. i Teoret. Fiz.* 26, 473-8(1954).—The absorption of light (368 mμ) was studied by the method of diffused reflection in phosphorescent ZnS contg. from 1.97×10^{-6} to 3×10^{-1} g. Cu per g. of sample (annealing time 15 min. at 900°). The luminescence of pure ZnS was blue. It changed to vernal green when ZnS contained 6.54×10^{-4} Cu. At $7.29 \times 10^{-4} - 2.2 \times 10^{-4}$ Cu, the luminescence suddenly changed to bright blue, which changed upon further increase in the concn. of Cu to green. The analysis of absorption curves revealed that the bright-blue luminescence, contrary to the accepted opinion (Riehl and Ortmann, *C.A.* 43, 7348b; S. Rothschild, *C.A.* 41, 1937g), is not the result of formation of new Cu centers but is caused by the reappearance of luminescence of pure ZnS. Annealing of the samples for 15 min. at 1100° had no effect on the general appearance of the absorption curves, except that the reappearance of ZnS luminescence occurred at 5×10^{-6} g. Cu per g. of sample.

A. P. Kotloby

(1)

CHEREPNEV, A.A.

The state of the copper activator in zinc sulfide phosphors. A. A. Cherepnev. *Zhur. Eksptl. i Teoret. Fiz.* 28, 458-62 (1955).—Amorphous ZnS pptd. by H_2S from $ZnSO_4$ soln. is heated with or without Cu activator with addn. of 5% NaCl to low temps. Without activator a weak luminescence is observed in prepns. heated to 450°. Luminescence is bright when samples are heated for 1 hr. to 600°. Addn. of Cu (10^{-4} g./g.) makes bright orange luminescence appear at 400°. Rising temp. and time shift the color to the yellow-green and increase the afterglow. When H_3BO_3 is used as a flux the processes are much weaker and slower. Cu is added as CuCl and $CuCl_2$. The brightness and the speed of formation are greatly increased in the first case (approximately 6:1 in the peak at 600° and 30 min.). If prepns. made with NaCl are heated a long time with H_3BO_3 the afterglow disappears and the green fluorescence becomes blue. Reversely a blue fluorescent powder prepd. with H_3BO_3 becomes green luminescent when reheated with NaCl. A series of tests were made on addn. of Cu and heating to 300–600° to ZnS prepns. made with NaCl and H_3BO_3 flux and heated to 900 and 1100°. These tests show the influence of the flux on the color of luminescence. This influence is explained by the formation of interstitial Cu. A highly dispersed, nearly at., state of Cu leads to green luminescence and afterglow. Increase to larger (colloidal) size of Cu particles destroys luminescence.

S. Pakswer

Zinc oxide in a zinc sulfide luminophors. A. A. Cherepnev. *Optika i Spektroskopiya* 1, 272-4(1956).—A series of luminescent samples were prepd. by various methods and their emission spectra were detd. It was shown that the presence of zinc oxide is unavoidable in the samples owing to the oxidation of ZnS. The reactions which take place between the sulfides and the oxides in the luminophors brings about the formation of lattice defects which can develop the luminescent properties by creating positions for activators and for the capture of electrons. J. R. L.

Physico Inst-im Lebedev, AS USSR

CHERENEV, A. A

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535.377 : 539.11

4191. ORIGIN OF LOCALIZATION LEVELS IN ZnS—Cu,Co PHOSPHORS. V.L.Levshin, V.F.Tumitskaya and A.A.Cherepnev. Optika i Spektrosk., Vol. 1, No. 2, 255-63 (1956) In Russian.

Experimental conditions have been carefully investigated to assure reproducible thermoluminescence curves. Materials studied were ZnS, ZnS—Cu, ZnS—Co and ZnS—Cu,Co, which were prepared by calcination in atmospheres of H_2S, N_2 or air. From the thermoluminescence curves obtained under varied conditions the authors derive conclusions about the origin of the separate groups of levels. C.B.S.Manders

CHEREPNEV, A. A.

535.37

4170. ZINC OXIDE IN ZINC SULPHIDE PHOSPHOR.

A.A. Cherepnev.

Optika i Spektroskop., Vol. 1, No. 2, 272-4 (1956). In Russian.

On the subject of the part played by oxygen compounds in the ZnS luminophor system there has been a considerable amount of work done and the author here discusses it critically. The partial volatilization of components (e.g. Zn, SO_2, S) which occurs during their mutual interaction suggests the formation of defects in the crystal lattice which aid the development of luminescent properties by creating places for the activator and for electron capture.

C.R.S.Manders

CHEREPNEV A A

51-6-12/26

AUTHOR: Cherepnev, A. A.

TITLE: Electroluminescent Zinc Sulphide activated with Copper. (Elektrolyuminestsiruyushchiy sul'fid tsinka, aktivirovannyy med'yu.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.II, Nr.6, pp.770-774. (USSR)

ABSTRACT: ZnS-Cu samples were prepared by methods described in Refs. 7-9. Two series of samples were prepared by heating for fifteen minutes in air using (a) NaCl and (b) H_3BO_3 fluxes. Electroluminescence was obtained by applying up to 3250 V. The results of the experiments are given in Tables 1 and 2. Table 1 shows the effect on luminescence of concentration of copper for phosphors heat-treated at two temperatures of 900 and 1100°C. Table 2 reports results for phosphors heat-treated at 800-1200°C with three concentrations of the copper activator: 10^{-5}, 10^{-4} and 10^{-3} g/g of ZnS. Colour of the electroluminescence obtained was similar to that observed on excitation with ultraviolet light of

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Electroluminescent Zinc Sulphide activated with Copper.

365 mμ wavelength. Two main colours, blue and green, were observed. In the blue emission there were no flashes or quenching. This emission is due to zinc centres. Flashes were found in samples heat-treated at lower temperatures (800 to 900°C); quenching was observed in samples heat-treated at higher temperatures (1000 to 1100°C), particularly when NaCl flux was used. The maximum intensity of electroluminescence occurred for both blue and green emission at copper concentrations of 5×10^{-4} to 10^{-3} g/g of ZnS. It is suggested that the conducting particles necessary for electroluminescence consist of Cu_2S. The author thanks M.D. Galanin, Z.L. Morgenshtern and M.N. Alentsev for advice and help. There is 1 figure, 2 tables and 16 references, 6 of which are Slavic.

Card 2/2

ASSOCIATION: Physical Institute imeni P.N. Lebedev, Academy of Sciences of the USSR. (Fizicheskiy institut im. P.N. Lebedeva AN SSSR.)

SUBMITTED: November 29, 1956.
AVAILABLE: Library of Congress.

CHEREPNEV, A.A.

Discussion of M. A. Konstantinova-Shlesinger's report. Izv. AN SSSR. Ser. fiz. 26 no.4:526 Ap '62. (MIRA 15:4)
(Luminescent substances--Spectra)

L 47043-65 EWG(j)/EWT(l)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4/Pl-4 IJP(c,
JD/JG

ACCESSION NR: AP5007548 S/0368/65/002/001/0082/0084

AUTHOR: Cherepnev, A. A.; Pakhomycheva, L. A. 35 32 B

TITLE: Influence of cerium additive on the luminescence spectrum of the luminor $SrSO_4$-Sm^{3+}

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 1, 1965, 82-84

TOPIC TAGS: luminor, luminor activation, strontium sulfate luminor, cerium

ABSTRACT: The authors observed a sharp change in the luminescence spectrum and an increase in the brightness of the luminor $SrSO_4$-Sm when small amounts of cerium were added. The luminor was excited by a mercury light with ultraviolet filter, and its luminescence spectra were photographed with a spectrograph. A noticeable change occurred even upon addition of 10^{-2} Ce, and additional samarium lines appeared. Although the phenomenon is similar to sensitization, in fact the addition of cerium changes the structure of the luminescence center. It is assumed that the phenomenon can be attributed to the effect of oxygen associated with oxidation-reduction processes in cerium oxides, with formation of a luminor. In particular, the specific chemical properties of cerium are such as to facilitate transitions

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ACCESSION NR: AP5007548

that depend on the changes in the valence of the cerium. It is assumed that the number of oxygen atoms in the surrounding samarium is determined by the cerium, and as a result centers with samarium alone differ from centers with samarium and cerium, and this is manifest in the difference in the luminescence spectra. "The authors thank M. D. Galanin for continuous interest in the work and a discussion of the results, M. A. Konstantinova for valuable remarks, and M. V. Danilova for help with the work." Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 21Jul64 ENCL: 00 SUB CODE: OP, SS

NR REF SOV: 008 OTHER: 005

Card 2/2

L 42417-65 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) Pi-4 IJP(c) JD/JG
ACCESSION NR: AP5008801 S/0080/65/038/003/0471/0476

AUTHOR: Cherepnev, A. A.

TITLE: Gold-activated zinc sulfides

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 3, 1965, 471-476

TOPIC TAGS: zinc sulfide optic material, gold, activated crystal, luminescence spectrum, absorption spectrum, phosphor

ABSTRACT: In previous studies of zinc sulfide phosphors, gold has received less attention than other typical activators (zinc, copper and silver). While some work has been done on ZnSCdSAu phosphors, the properties of ZnSAu phosphors have been covered only superficially. This report is an attempt to supplement existing experimental data on ZnSAu phosphors as well as to discuss problems in the formation of these materials and the nature of their luminescence when excited by light. Zinc sulfide in quartz crucibles was roasted in a Silit furnace for 30 minutes, using NaCl and H_3BO_3 as flux. A mercury quartz lamp with a filter which passes light with a wavelength $\lambda = 365$ mμ was used for studying the luminescence of the samples. Filtered light with wavelengths $\lambda = 405$-436 mμ was also used in taking the

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ACCESSION NR: AF5008801

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spectra. The spectral characteristics of luminescence and absorption were determined at room temperature using a UM-2 monochromatic illuminator and an FEU-19 photomultiplier. The relative intensities were measured on a Pulfrich photometer. Heat treatment of the samples is given in detail. Luminescence and absorption spectra are given for various activator concentrations. In samples without activator and with low gold concentrations, there is a clearly defined band of self excitation with a peak at $\lambda = 460$ mμ. The spectra of samples with higher concentrations of activator show two bands with maxima at about 490 and 500 mμ. The mechanism of ZnSAu phosphor formation is explained. "I express my gratitude to L. A. Pakhomycheva, M. V. Danilova and V. I. Anosov for help in the work, to V. V. Antonov-Romanovskiy and M. N. Alentsev for their many comments, and to M. D. Galanin for his interest in the work." Orig. art. has: 8 figures and 2 tables.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedev AN SSSR (Physics Institute)

SUBMITTED: 05Jul63 ENCL: 00 SUB CODE: OP

NO REF SOV: 005 OTHER: 008

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Card 2/2

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308410015-9"

CHEREPNEV, A.I.

History of metalcutting tools. Trudy Inst.ist.est. i tekh. 8:255-259 '56. (Cutting tools) (MLRA 9:9)

CHEREPNEV, A.I.

History of the development of metal-cutting tools in the first half of the 19th century. Trudy Inst.ist.est.i tekh.13:35-50 '56.
(MLRA 10:1)

(Russia--Cutting tools--History)

CHEREPNEV, A.I.

On the history of the development of materials used in the production of metal-cutting tools. Vop.ist.est. i tekh. no.2:227-237 '56.
(Cutting tools) (MLRA 10:1)

CHEREPNEV, A. I., Cand Tech Sci -- (diss) "Main Stages in the Development of a Metal-Cutting Tools." Mos, 1957. 15 pp (Acad Sci USSR, Inst of History of Natural Science and Techniques), 100 copies (KL, 47-57, 89)

CHEREPNEV, A.I.

History of the machining of metal cylinders. Trudy Inst. ist. est. i tekh. 21:83-103 '59. (MIRA 13:3)
(Metal cutting) (Cylinders)

CHEREPNEV, A.I.

From the hisoty of metalworking; technology of producing lathe cutting tools in the 18th century. Trudy Inst.ist.est.i tekh. 29:92-111 '60. (MIRA 13:6)
(Metal-cutting tools)

CHEREPNEV, A.I.

Development of the mechanization and automation of metal-cutting processes. Trudy Inst.ist.est. i tekh. 45:28-47 '62.
(MIRA 15:8)

(Automation) (Metal cutting--Technological innovations)

CHEREPNEV, A.I.

Development of the mechanization and automation of metal-cutting processes. Trudy Inst.ist.est.i tekh. 38:59-81 '61. (MIRA 14:5)
(Metal cutting) (Automation)

CHEREPNEV, G.

How to develop poultry raising on collective farms. Nauka i pered.op.v sel'khoz. 7 no.6:66 Je '57. (MIRA 10:7)

1. Zamestitel' nachal'nika Lipetskogo oblastnogo upravleniya sel'skogo khozyaystva.
(Poultry)

ЧЕРЕПНЕВА, А. А.

USSR / Optics K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10379

Author : Levshin, V.L., Tunitskaya, V.F., Cherepneva, A .A.
Inst : Physics Institute, Academy of Sciences, USSR
Title : Origin of Localization Levels in ZnS-Cu and Co Phosphors.

Orig Pub: Optika i spektrokopiya, 1956, 1, No 2, 255-263

Abstract: An investigation was made of the thermal glow (TG) of the phosphors ZnS, ZnS-Cu, ZnS-Co and ZnS-(Cu, Co) (annealing in H_2S and N_2 and air for 30 minutes). In ZnS, the azure glow (bands at approximately 460 millimicrons) occurs only in the presence of a flux ($CaCl_2$). The peak of TG at -130° is due to the superstoichiometric zinc (for which favorable circumstances are produced by the chlorine), and the peak at -60° is ascribed to the oxygen. The green glow is ascribed to traces of copper. In ZnS-Cu, in addition to the zinc and oxygen peaks, there appear three new peaks, barely noticeable at -5 and 0° and a considerable one at +20°. These are ascribed to copper and appear to be the cause of the longer

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USSR / Optics

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Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10379

afterglow of ZnS-Cu at room temperature. ZnS-Co during the instant of excitation has an azure glow, weak at room temperature, intense at -186°. Introducing Co decreases sharply the light sums from the small local levels. Simultaneously there appear deeper levels in the region of +50°. Their structure is not clear because of the small light sums. In ZnS-(Cu, Co), the peaks at -130 and -60° are suppressed rapidly with increasing Co, and the copper peaks (-5,0, and +20°) are suppressed slowly, while new peaks appear at 50 and 80°.

Card : 2/2

CHEREPNEVA, Ye. I.

PHASE I BOOK EXPLOITATION SOV/3733

Rudakova, Nina Yakovlevna, Anna Vasil'yevna Timoshina, and Yekaterina Ivanovna Cherepneva

Proizvodstvo parafina (Production of Paraffin) Moscow, Gostoptekhizdat, 1960. 130 p. 1,700 copies printed.

Ed.: P.N. Ryabov; Executive Ed.: O.M. Yenisherlova; Tech. Ed.: I.G. Fedotova.

PURPOSE: This booklet is intended for engineers and technicians of enterprises engaged in the production, conversion and utilization of paraffin.

COVERAGE: The booklet explains different methods of producing paraffin wax in Soviet refineries. Crudes used in the Soviet Union for paraffin production are analyzed along with their physicochemical properties, and the paraffin content of crudes from various regions of the Soviet Union is indicated. Cold settling, centrifuging, and filter-press procedures are described and methods of treating, molding, packaging and transporting paraffin are reviewed. Flow diagrams of paraffin production at the Groznyy, Drogobych and Novokuybyshevsk refineries are indicated, and paraffin production carried out with the aid of selective solvents is described. Methods for analyzing paraffin are reviewed and laboratory control is explained. Characteristics of paraffin distillates and products with

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their boiling points, solidification points and melting points are presented in tables. The authors thank A.I. Sorokin and S.E. Kreyn, P.N. Ryabov, A.Ye. Al'tshuler and I.S. Golomshtok. There are 45 references: 44 Soviet and 1 English.

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Regulate the wages of machine-tractor station mechanics. Sots.trud no.9:49-55 S '57. (MLRA 10:9)
(Machine-tractor stations--Production standards)

CHEREPNIN, I.

Problems in the wages of machine operators on collective farms.
Vop. ekon. no.8:39-46 Ag '58. (MIRA 11:9)
(Collective farms) (Wages)

CHEREPNIN, I.G.

CHEREPNIN, I.G.

Cutting worm gears with the aid of a forming tool. Rats. i izobr. predl. v stroi. no.103:14 '54. (MLRA 8:11)
(Machine-shop practice) (Gearing)